

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2002-033809

(43)Date of publication of application : 31.01.2002

(51)Int.Cl.

H04M 1/02

H04Q 7/32

H04M 1/23

(21)Application number : 2000-214729 (71)Applicant : SONY CORP

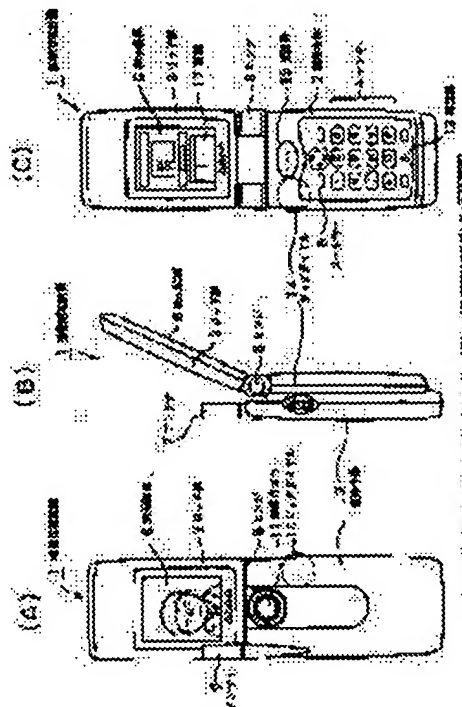
(22)Date of filing : 14.07.2000 (72)Inventor : WADA KIYOSHI

## (54) MOBILE TERMINAL

### (57)Abstract:

PROBLEM TO BE SOLVED: To enhance the user-friendliness of a mobile terminal that can be folded, collect data from the Internet or the like and has a jog dial.

SOLUTION: A rid section 3 having a display device 6 is folded to a case body 2 of the mobile terminal and turnable to the case body 2, a jog dial 14 placed freely turnably is provided to a side face of the case body 2, and when collecting data from the Internet or selecting prescribed data, the rid section 3 is turned and folded to the case body 2 and the jog dial 14 selects data.



## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's  
decision of rejection]

[Date of requesting appeal against examiner's  
decision of rejection]

[Date of extinction of right]

\* NOTICES \*

JPO and NCIPi are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

---

DESCRIPTION OF DRAWINGS

---

[Brief Description of the Drawings]

[Drawing 1] It is a front view at the tooth back and side-face list of personal digital assistant equipment of this invention.

[Drawing 2] It is the rotation condition explanatory view of the lid section of the personal digital assistant equipment of this invention.

[Drawing 3] It is the decomposition perspective view of the hinge of the personal digital assistant equipment of this invention.

[Drawing 4] It is a data distribution model explanatory view by the personal digital assistant equipment of this invention.

[Drawing 5] It is a display screen explanatory view at the time of jog dial actuation of the gestalt terminal unit of this invention.

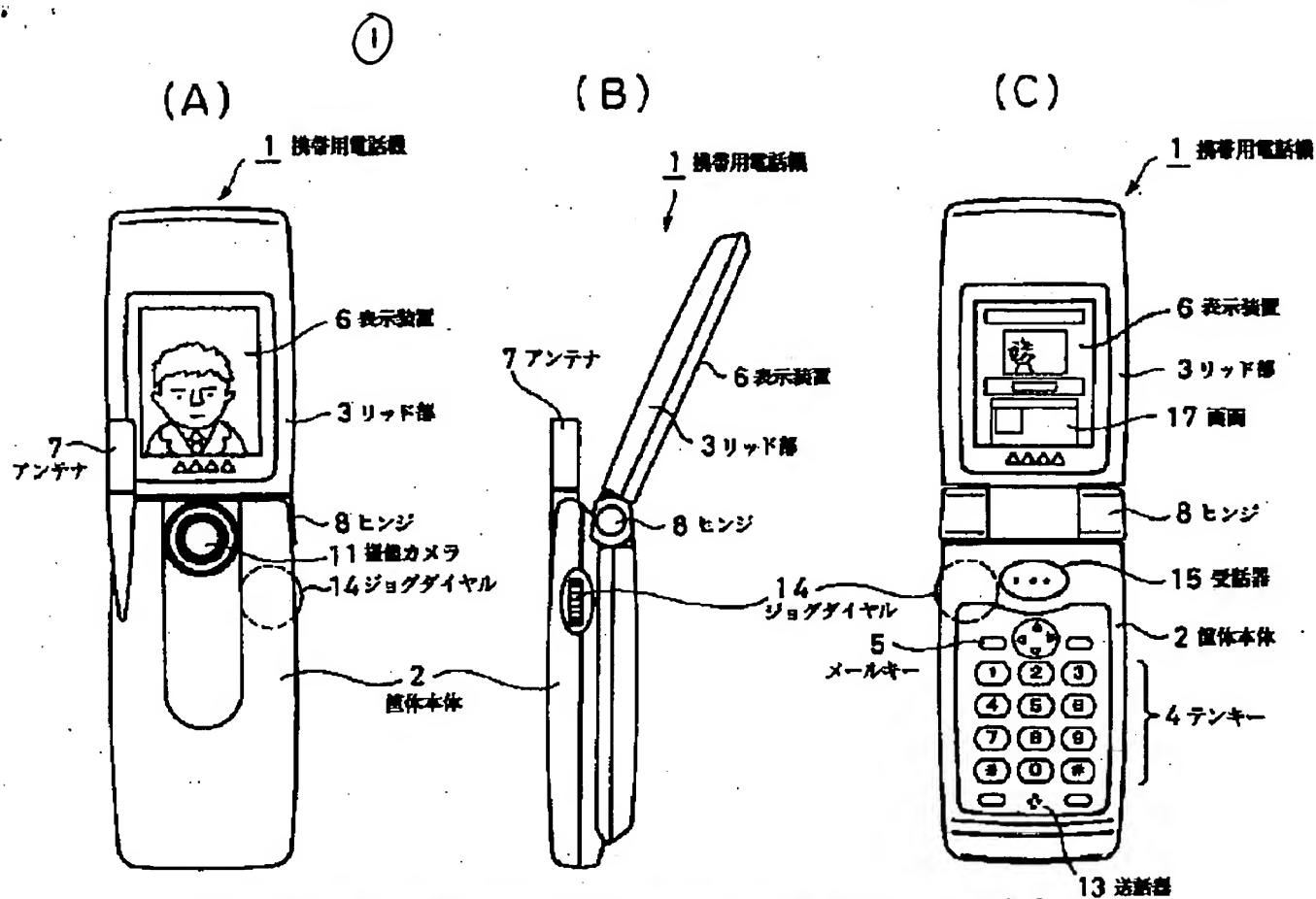
[Drawing 6] It is the block diagram of conventional personal digital assistant equipment.

[Description of Notations]

1 [ .. A control unit (ten key), 5 / .. An e-mail key, 6 / .. An indicating equipment, 7 / .. An antenna, 8 / .. A hinge, 14 / .. Jog dial ] .... Portable telephone, 2 .. The body of a case, 3 .. The lid section, 4

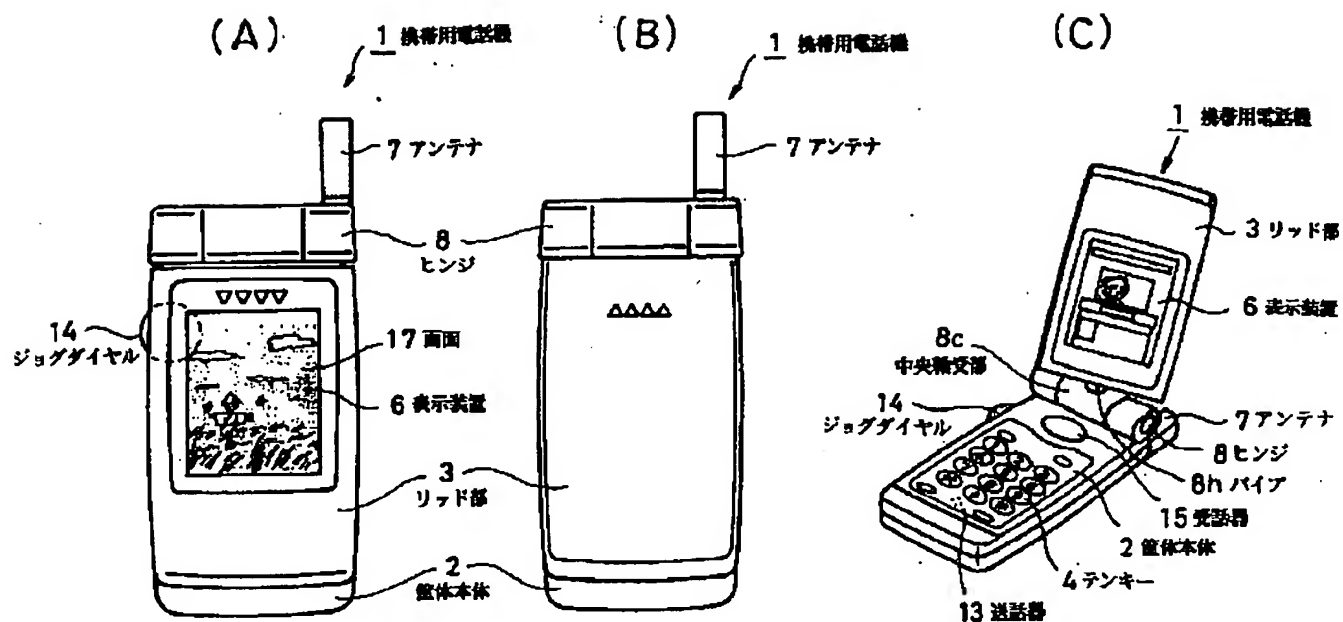
---

[Translation done.]



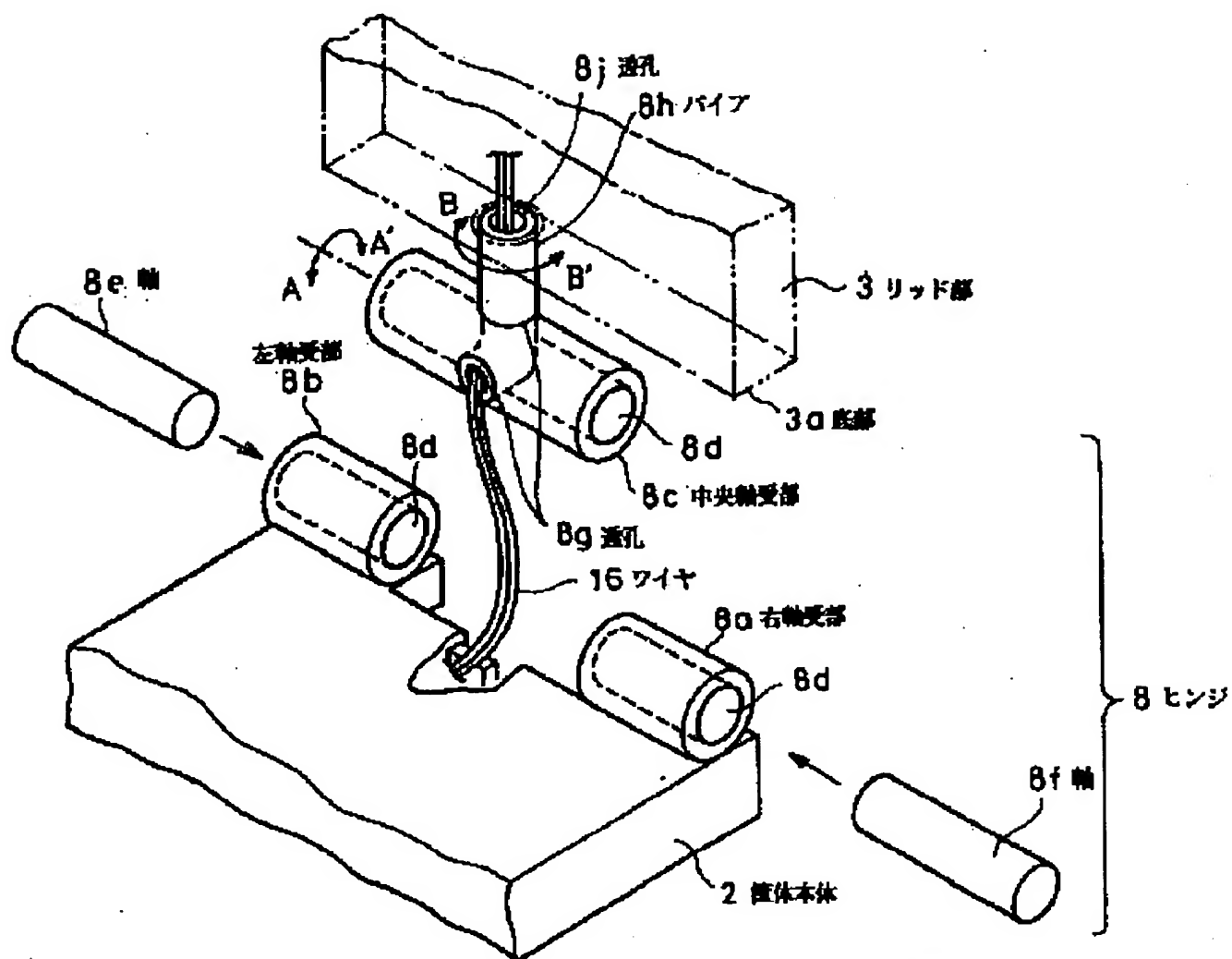
本発明の携帯端末装置の背面及び側面並びに正面図

②

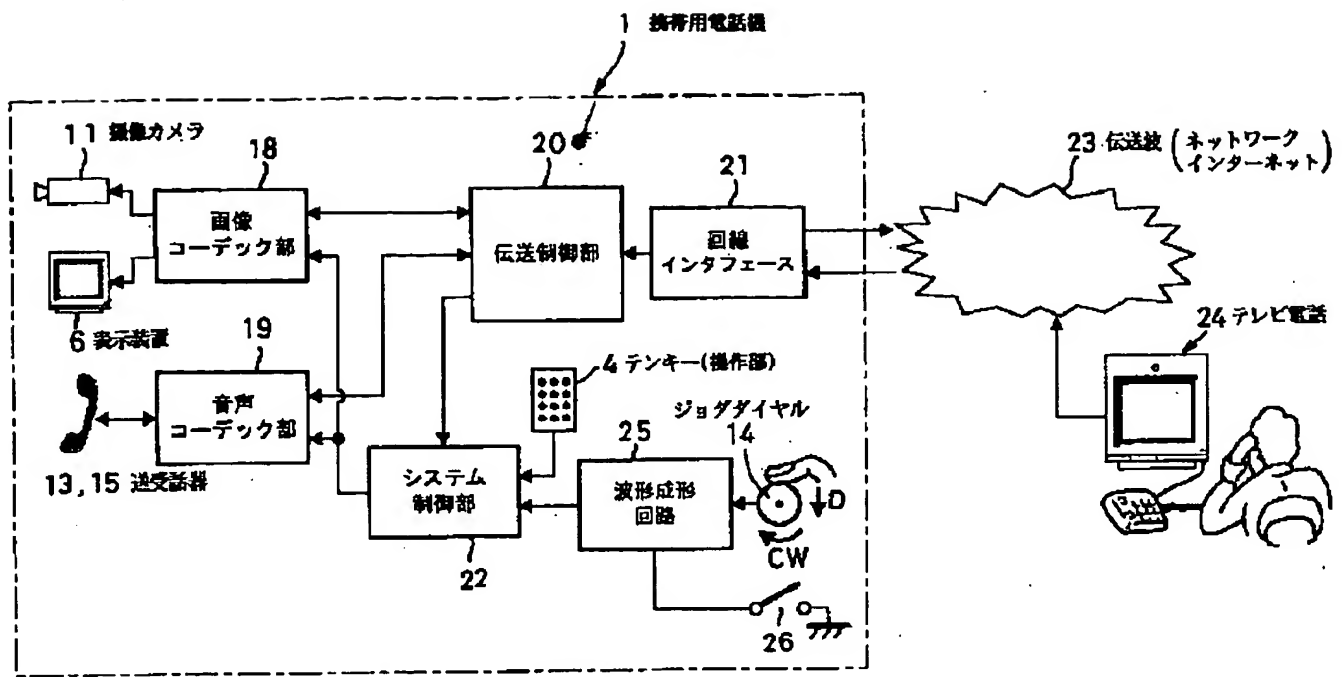


本発明の携帯端末装置のリッド部の回転状態説明図

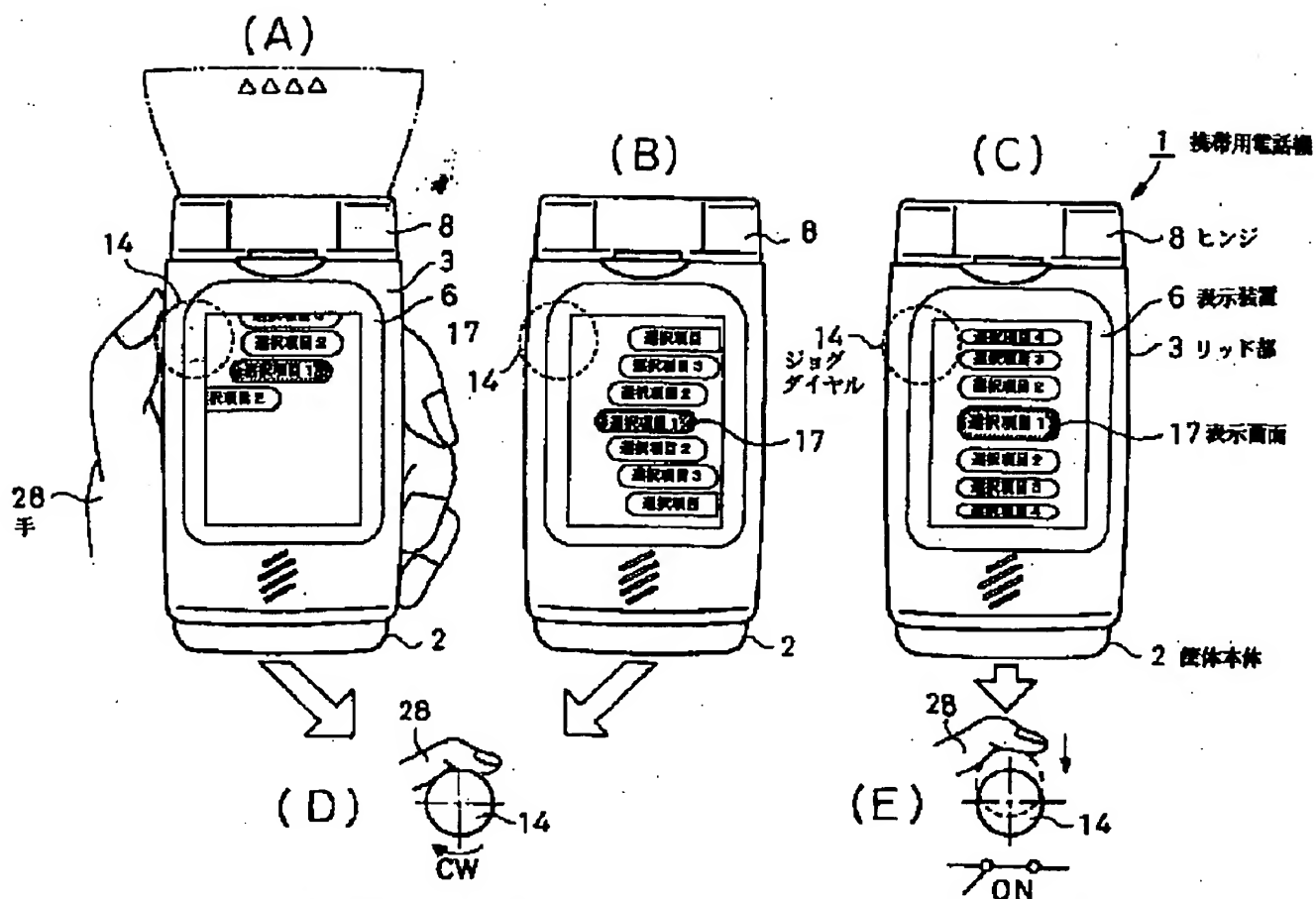
③



本発明の携帯端末装置のヒンジの分解斜視図

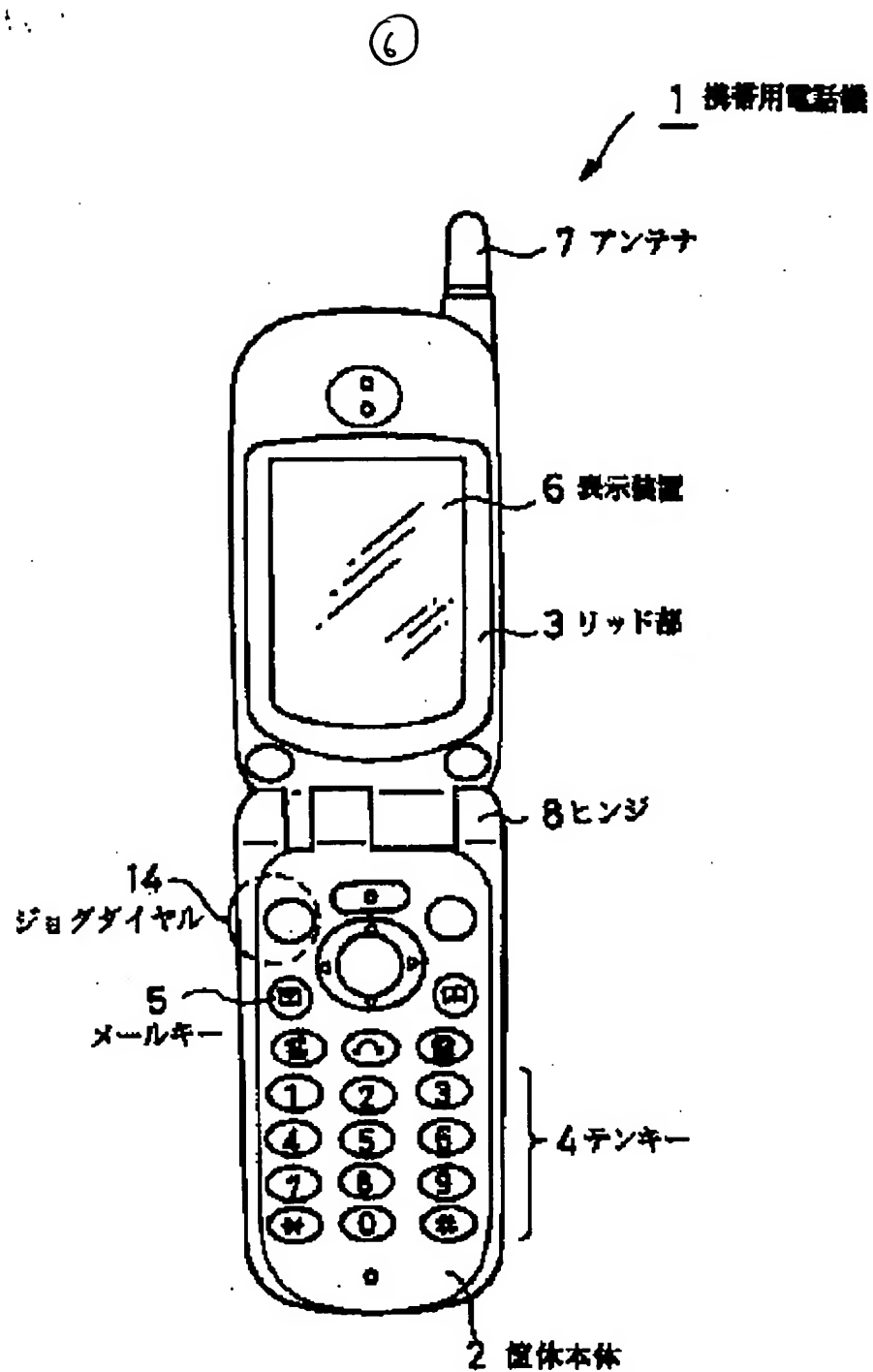


本発明の携帯端末装置による映像配信モデル説明図



本発明の携帯端末装置のジョグダイヤル選択説明図





従来の携帯端末装置の構成図

\* NOTICES \*

JPO and NCIPi are not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

---

DETAILED DESCRIPTION

---

[Detailed Description of the Invention]

[0001]

[Field of the Invention] With respect to personal digital assistant equipments, such as PDA (Personal Digital Assistance) and portable telephone, especially this invention makes a display means rotatable, and relates to the personal digital assistant equipment which arranged the jog dial in the body of a case.

[0002]

[Description of the Prior Art] From the former, the personal digital assistant equipment which were and therefore received it made to deliver various information, such as an Internet mail, to personal digital assistant equipment is known.

[0003] Drawing 6 shows the equipment configuration which enabled it to perform an Internet mail with above-mentioned personal digital assistant equipment, and the portable telephone 1 of which folding was made possible consists of a body 2 of a case, and the lid section 3 in drawing.

[0004] The e-mail key 5 and jog dial 14 grade which can be switched by one-touch are arranged in the principal plane of the body 2 of a case of the portable telephone 1 in the ten key 4 and Internet mail menu as various actuation key groups, and it has a display 6 and antennas 7, such as LCD (liquid crystal display section), in the principal plane of the lid section 3.

[0005] The miniaturization is attained by folding up the body 2 of a case, and the lid section 3 through a hinge 8.

[0006]

[Problem(s) to be Solved by the Invention] By the portable telephone 1 explained with the above-mentioned conventional configuration, when choosing an Internet mail, the address predetermined by the music distribution, eye music, etc., selection operability can be raised by operating the jog dial 9 and choosing a predetermined item.

[0007] However, in order to perform alter operation for a display 6 with \*\* where the lid section 3 is opened through a hinge 8 from the body 2 of a case when inputting the text information which is going to send using such a jog dial 14 using a ten key 4, if it changes into the condition of having opened the lid section 3 especially in music selection of a music distribution etc. and they are not placed like, although the above-mentioned ten key 4 formed in the body 2 side of a case is not used although especially a problem is not produced -- the contents of a display -- \*\*\*\* -- it has the technical problem which cannot do things.

[0008] This invention was made in order to solve an above-stated technical problem, when choosing eye music of music distributions, such as the Internet, or reading predetermined text information one by one, folds up the portable telephone 1 and is miniaturized, and the personal digital assistant equipment which enabled it to operate a jog dial in the condition of being easy to have in a hand is offered.

[0009]

[Means for Solving the Problem] The 1st personal digital assistant equipment of this invention is personal digital assistant equipment which consisted of the lid sections of which folding was made possible to the body of a case, and the lid section has a display means while being pivoted pivotable to

the body of a case, it arranges a jog dial in the body of a case, and grows into it.

[0010] In the 1st invention, the 2nd personal digital assistant equipment of this invention arranges a jog dial in the right or the left lateral section of the body of a case, and changes.

[0011] the condition of having folded up at the time of jog dial actuation according to the personal digital assistant equipment of this invention -- information, such as an Internet mail, -- \*\*\*\* -- things are made and what has the good user-friendliness whose operability portable telephone became compact at the time of jog dial actuation, and improved is obtained.

[0012]

[Embodiment of the Invention] Hereafter, portable telephone is minutely described about drawing 1 thru/or drawing 5 as an example of 1 gestalt of the personal digital assistant equipment of this invention.

[0013] Drawing 1 (A) thru/or drawing 1 (C) show a front view to the rear view and the side elevation list of portable telephone of this invention, and gives the same sign to the corresponding point with drawing 6.

[0014] In drawing 1, in drawing 1 (A), the rear view and drawing 1 (B) which show the condition of having opened the lid section 3 of the personal digital assistant equipment of this invention show the same side elevation, and drawing 1 (C) shows the same front view.

[0015] A transceiver circuit, E-mail, and Internet communication required [ in drawing 1 (A) thru/or drawing 1 (C) ] as portable telephone 1 in the body 2 of a case, It has the ten key 4 which serves as an operational control unit in the function of each above-mentioned circuit as it is shown in a front view, while having each circuit which enabled distribution of a video signal etc., the e-mail key 5, a headset 13, and 15 grades. As shown in rear view at the tooth-back side of the body 2 of a case, opening of the image pick-up camera 11 is prepared in about eight hinge of the upper part by the side of the tooth back of an antenna 7 and the body 2 of a case.

[0016] As shown in the side elevation of drawing 1 (B), the jog dial 14 for choosing the various application functions on the display screen 17 of an indicating equipment 6 etc. as the left lateral of the body 2 of a case is formed.

[0017] The lid section 3 accomplishes that folding is free through a hinge region 8 to the body 2 of a case, and the displays 6, such as LCD, are formed inside the lid section 3. Therefore, as the condition of having folded up the lid section 3 in the usual condition is shown in drawing 2 (B), a display 6 is built in the lid section 3, and is miniaturized.

[0018] The decomposition perspective view of the hinge 8 of the portable telephone of this example is shown in drawing 3. Center bearing section 8c is prepared between two lateral-axis receiving part 8a which fabricated the hinge 8 to one with the body 2 of a case, synthetic resin, etc., and 8b. The shafts 8e and 8f on either side were fitted in into 8d of bores dug by each [ these ] bearings 8a, 8b, and 8c, and to the lateral-axis receiving parts 8a and 8b, center bearing section 8c has accomplished that it is rotatable to the shafts 8a and 8f on either side, as arrow-head A-A' shows.

[0019] 8g of bores of L characters is dug so that it may intersect perpendicularly with the abbreviation mid gear of center bearing section 8c with 8d of bores, pipe 8h is inserted in so that it may fit loosely into 8g of bores of the shape top of this L character, and it is made to constitute to 8g of bores, this pipe 8h, so that it may become rotatable in the direction of arrow-head B-B'. In this case, base 3a of the lid section 3 is made to fix a pipe 8h tip.

[0020] Moreover, it sets up so that pipe 8h may be fixed to center bearing section 8c as other approaches, and the pipe 8h point inserted in bore 8j dug to pars-basilaris-ossis-occipitalis 3a of the lid section 3 is made to pivot so that it may become rotatable in the direction of arrow-head B-B' to the lid section 3.

[0021] Thus, when making it pivot in the direction of B-B' rotatable, although not shown in drawing 3, it is made to constitute to the ball embedded for every predetermined include angle at 8g of bores, and 8j, so that it may rotate in click motion, and 180 degrees of lid sections 3 are made to constitute to the body 2 of a case, so that it may be pivotable.

[0022] The wire 16 linked to the lid section 3 side is connected through 8g of bores of center bearing

section 8c, and pipe 8h from the body 2 side of a case.

[0023] The display 6 which showed the condition of rotating the lid section 3 counterclockwise focusing on pipe 8h to drawing 2 (C), was made to rotate 180 degrees completely, and was prepared inside the lid section 3 with the hinge 8 like \*\*\*\* is had and caused to the transverse-plane side of the body 2 of a case, and the condition of having folded up the lid section 3 is shown in drawing 2 (A).

[0024] In the case of drawing 2 (A), the top and bottom of Screen 17 of a display 6 are reversed compared with the case of drawing 2 (C), but Screen 17 reversed top and bottom electrically, and the normal screen 17 has accomplished it to Mr. \*\*\*\*\* by the busy condition of drawing 2 (A).

[0025] Drawing 4 shows the model of the TV phone which performs video delivery through the Internet through the transmission lines 23, such as a narrow-band or a network of broadband ISDN, and the Internet, using the above-mentioned portable telephone 1 which is personal digital assistant equipment of this invention.

[0026] The codec of the image input from the image pick-up cameras 11, such as CCD arranged in the tooth-back side of the body 2 of a case, is carried out in a dynamic image or the static-image codec section 18, and it is transmitted to a transmission line 23 on radio through a cable or an antenna 7 through the transmission control section 20 and the circuit interface 21. In this case, the display 6 projects the image which it is going to distribute as Screen 17. Moreover, this display 6 also projects the text information and the image screen which are transmitted from the TV phone machine 24 side transmitted.

[0027] The codec also of the sound signal from a telephone transmitter 13 is carried out in the voice codec section 19, and it is transmitted to a transmission line 23 through the transmission control section 20 and the circuit interface 21. The system control section 22 controls the image codec section 18 and the voice codec section 19, and the transmission control section 20 is controlling the system control section 22. The system control section 22 inputs various text information through the control units 4, such as a ten key.

[0028] The jog dial 14 is it being made by the clockwise rotation (CW) it being rotatable, and pressing downward (D) clockwise, by the fingertip. It is made like and the pulse according to the rotational speed of the jog dial 14 by which the switching means 26 is turned on or turned on occurs through a waveform shaping circuit 25. The pulse shaped in waveform is supplied to the system control section 22, and this system control section 22 outputs a change-over pulse for every predetermined item list, and chooses the selections displayed on the display 6 according to the pulse generating consistency in a fixed period, for example, a pulse number.

[0029] In order the transmission band is not guaranteed like [ in the case of a network like ISDN ] in the case where a transmission line 23 is the Internet, and transmission speed is a low speed (10 - 120kbps), to multiplex them to one stream after an image and a sound signal carry out compression coding at 1/hundreds since it has a jitter, and to compensate band fluctuation, a buffer etc. is formed, band fluctuation is absorbed and video delivery through the Internet is performed.

[0030] Actuation of an above-mentioned configuration is explained below. A transmission line 23 is now minded for its own face etc. with the portable telephone 1. When performing transmission of an image and voice to the terminal unit of the TV phone machine 24 grade of the other party, as shown in drawing 1 (A), 180 degrees of lid sections 3 are rotated. Since the display 6 side of the lid section 3 can be turned to the front-face side of the body 2 of a case, the display 6 of opening of the image pick-up camera 11 of the body 2 of a case and the lid section 3 can be turned to itself and it can picturize It can picturize easily, \*\*\*\*(ing) and carrying out the monitor of its own [ on Screen 17 of a display 6 ] face.

[0031] Moreover, in the condition which the lid section 3 is folded up from the condition of drawing 1 (A) to a transverse-plane side, and shows in drawing 2 (A), opening of the image pick-up camera 11 formed in the tooth-back side is turned to an external photographic subject, and when picturizing, an image pick-up becomes possible, carrying out the monitor of Screen 17 which it is going to picturize with a display 6. In this case, related \*\*\*\*\* is made good for the jog dial 14 at an image pick-up means.

[0032] furthermore, although it be possible to be able to picturize an external photographic subject

through the image pick-up camera 11 arranged in the tooth back of the body 2 of a case also where the lid section 3 be open as show in drawing 1 (C), and to use a display 6 as the monitor of a photographic subject, it will use in this case as monitor display at the time of various input data actuation, such as a message of the portable telephone 1, picture transmission, and E-mail.

[0033] In the condition which showed in drawing 2 (A), since it is folded up when operating the jog dial 14 single hand, it becomes easy to operate it. In this condition, since the control unit of ten key 4 grade shown in drawing 2 (C) is hidden by the lid, when choosing the address predetermined by an above-mentioned Internet mail, an above-mentioned music distribution, etc., and eye predetermined music, it is suitable.

[0034] Drawing 5 rotates 180 degrees of lid sections 3, as shown in drawing 2 (A), and it explains actuation of the jog dial 14 in the portable telephone 1 by which the condition of having folded up to the transverse-plane side was miniaturized, and the relation of the display screen 17 on the display 6 chosen.

[0035] The case where made the clockwise rotation CW rotate the jog dial 14 like drawing 5 (D), and the predetermined selections 1, for example, eye music, are chosen by the hand 28 of the operator of drawing 5 (A) and drawing 5 (B) is shown. Drawing 5 (A) is the case where it makes as [ display / predetermined eye selection music (selections 1) / from the left lateral of the display screen 17 / on the display screen 17 bottom / one by one ], and drawing 5 (B) shows the case where eye predetermined selection music (selections 1) is displayed in the center of abbreviation of the display screen one by one, from the right lateral of the display screen 17.

[0036] The font of eye selection music (selections 1) becomes large one by one from the display screen 17 bottom, it becomes the font greatest in the central part of the display screen 17, eye selection music (selections 1) becomes readable, and drawing 5 (C) is made as [ display / eye selection music not more than a degree (selections 2) / on the small display screen / according to the other side, a font becomes small one by one, and / on the upper part / mostly ].

[0037] If the jog dial 14 is turned in the condition which shows in drawing 5 (C), eye selection music predetermined by the list list (selections 1) is looked for, eye predetermined music is determined and the jog dial 14 will be pressed as shown in drawing 5 (E), the switching means 26 "is turned on" on and the system control section 22 is made as [ appear / on the display screen 17 on a display 6 / a menu / 1 / selection music ].

[0038] According to the personal digital assistant equipment of this invention, it is compact at the time of the predetermined item selection at the time of an Internet mail or a music distribution, and the good thing of operability is obtained at it.

[0039]

[Effect of the Invention] the condition of having folded up at the time of jog dial actuation according to the personal digital assistant equipment of this invention -- information, such as an Internet mail, -- \*\*\*\* -- things are made and it is obtained in what has the good user-friendliness whose operability the telephone for gestalten became compact at the time of jog dial actuation; and improved.

---

[Translation done.]